Visakhapatnam district of Andhra Pradesh. On critical identification and detailed study, the specimen turned out to be *Ipomoea hederifolia* Linn. When compared with red/orange coloured flowers, there were slight variations in the specimens in most of the characters except the inflorescence type, colour of the flower and size of the fruit. The details of the morphological feature are as follows: an annual twiner, 3-6 m in height; stems glabrous or sparsely pubescent; leaves ovate to suborbicular, 2.5-8.0 x 1.5-8.5 cm, acute to acuminate apex, cordate at base, entire or 3-lobed, glabrous; flowered cymes; pedicles 10-12 mm long; sepals oblong to elliptic, 3-6 mm long, obtuse to truncate; outer sepals with 1.5-2.0 mm long, subterminal, fleshy arista, glabrous; corolla yellow, hypocrateriform, 3.4-5.0 cm long; capsules subglobose, 7-9 mm long; seeds pyriform, dark brown, glabrous.

On consultation to Dr. M.J. Parmar, Dy. Director of BSI, Arid zone Circle Jodhpur, it has been noted that no yellow flowered Morning Glory from the Indian subcontinent is available. For further clarification, we also consulted Dr. Steven Jensen, Jordell Laboratory, Royal Botanical Garden Kew; he communicated that there was only one specimen of *I. hederifolia*, which had been collected from Asia (i.e. in Jiangsu-China). Perusal of literature (Cooke 1901-1909, Bentham and Hooker 1862-83; Shah 1978) has revealed that there is no record of yellow flowered specimens in *Ipomoea hederifolia*. This is therefore, the first record from India. Acc. No. VMR/ 523, 547.

ACKNOWLEDGEMENTS

We thank Dr. M.J. Parmar, Dy. Director, Botanical Survey of India, Jodhpur and Dr. Steven Jensen, Jordell Laboratory, Kew, for the valuable information.

REFERENCES

Bentham, G. & J.D. Hooker (1862-1883): *Genera Plantarum*. London.

Cooke, T. (1901-1908): The Flora of the Presidency of Bombay. Volume I, II & III, London. (Rep. Edn. 1958, Botanical Survey of India Calcutta).

Shah, G.L. (1978): Flora of Gujarat State. Part I & II. Sardar Patel University, Vallabh Vidyanagar.

22. *ORNITHOGALUM ERYTHRAEUM* (WEBB & BERTHEL.) MANNING AND GOLDBLATT (HYACINTHACEAE) – A NEW RECORD FOR MAHARASHTRA

K.V.C. Gosavi[1,3], U.S. Yadav[2] and S.R. Yadav[1,4]

[1]Department of Botany, Shivaji University, Kolhapur 416 004, Maharashtra, India.
[2]Department of Botany, Willingdon College, Sangli 416 415, Maharashtra, India. Email: ushayadav.2009@rediffmail.com
[3]Email: kumarvinodgosavi@gmail.com
[4]Email: sryadavdu@rediffmail.com, shrirangyadav@yahoo.com

Introduction

Morphological, phytochemical, microstructural and molecular data on members of Hyacinthaceae has resulted in the recognition of four subfamilies, the new world Oziroeoideae and the old world Hyacinthoideae, Ornithogaloidae and Urginoideae (Speta 1998a,b; Pfosser and Septa 1999; Manning *et al.* 2004). Subfamily Ornithogaloideae, characterized by flattened or angular seeds with tightly adhering testa, is considered to include the single genus *Ornithogalum* L., [Sp. pl.: 306 (1753). Type: *Ornithogalum arabicum* L.], which is expanded to include the genera *Albuca* L., *Dipcadi* Medik., *Galtonia* Decne., *Neopatersonia* Schonland, and *Pseudogaltonia* (Kuntze) Engl. According to Manning *et al.* (2004), the generic segregates of distinctive floral forms are morphological syndromes developed in association with diverse pollination strategies. It opens the way to accept that they reflect adaptive modes that were exploited by groups of related species rather than representing generic boundaries. Thus, the species previously placed in *Dipcadi* are now treated under *Ornithogalum* L. Manning *et al.* (2004).

All the 9 species and two varieties of *Dipcadi* in India are now treated under the genus *Ornithogalum* by Manning *et al.* (2004). The Indian species include *Ornithogalum concanense* (Dalzell) J.C. Manning and Goldblatt, *O. erythraeum* (Webb & Berthel.) Manning and Goldblatt, *O. maharashtrense* (Deb. & S. Dasgupta) J.C.Manning and Goldblatt, *O. minor* (Hook.f.) J.C. Manning and Goldblatt, *O. reidii* (Deb. & S. Dasgupta) J.C. Manning and Goldblatt, *O. saxorum* (Blatt.) J.C. Manning and Goldblatt, *O. serotinum* (L.) J.C. Manning and Goldblatt, *O. turbinatum* J.C.Manning and Goldblatt, *O. turbinatum* var. *madrasicum* (E. Barnes & C.E.C. Fisch) J.C.Manning and Goldblatt, *O. ursulae* (Blatt.) J.C. Manning and Goldblatt and *O. ursulae* var. *longiracemosum* (Deb. & S. Dasgupta)

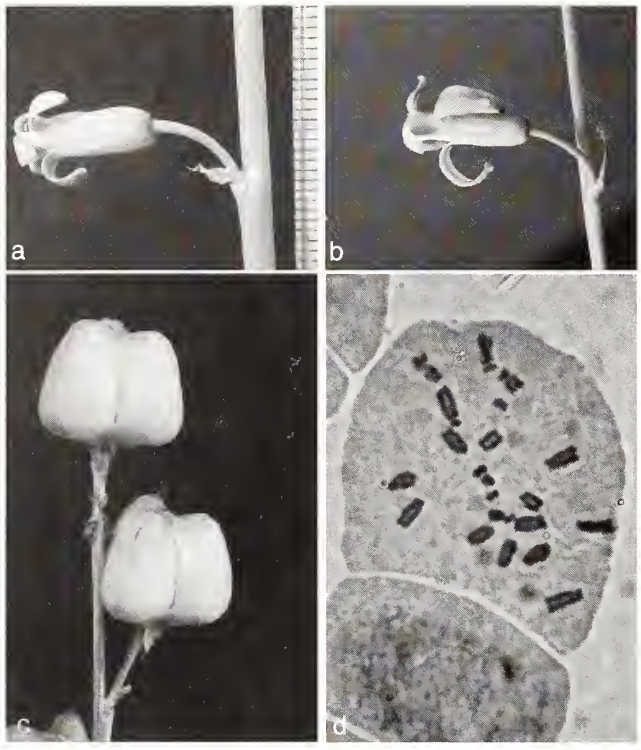

Fig. 1: *Ornithogalum erythraeum*
a. flower from Jodhpur; b. flower from Dhulia; c. fruits; d. somatic chromosomes (2n=22)

J.C. Manning and Goldblatt. *Ornithogalum maharashtrense* and *O. ursulae* var. *longiracemosum* are variants of *O. ursulae* do not deserve any taxonomic status and have been reduced to synonyms of *O. ursulae*.

Of the remaining eight species, six are recorded for the state of Maharashtra. *Ornithogalum erythraeum* is known to occur in Egypt, Afghanistan, Baluchistan, Pakistan and India. In India, it is so far reported from Bhairaswara, Jaisalmer and Jodhpur region of Rajasthan.

During August 2006, some specimens of *Ornithogalum* were collected from Laling ghat in Dhulia district of Maharashtra. On detailed analysis, the specimens turned out to be of *Ornithogalum erythraeum*. Somatic chromosome number 2n=22 was observed in the specimen, which has also been reported for the species by earlier workers (Jakhi *et al.* 1994). An occurrence of *O. erythraeum* in Dhulia district forms a new record for the state of Maharashtra. The present paper reports on morphology, somatic chromosome number and an extended distribution of *O. erythraeum*.

Ornithogalum erythraeum (Webb & Berthel.) J.C. Manning and Goldblatt. [Edinb. Jour. Bot. 60(3): 533-568 (2004)]. *Dipcadi erythraeum* Webb & Berthel., Hist. nat. Illes Canaries 2 (3): 341. 1848; Cooke, Fl. Pres. Bomb. 2:770. 1907 (Repr. ed 3: 278.1958); Bhandari, Fl. Indian desert 352.1978; Shetty and Singh in Fl. Raj. 2. 843.1991. *Hyacinthus serotinus* Forsskal, Fl. Aegyptiaco – Arabica 209.1775. *Uropetalum unicolor* Stocks in Journ. Bot. 4: 180. 1852. *Dipcadi unicolor* (Stocks) Baker in Journ. Linn. Soc. 11: 397. 1871; Hook. Fl. Brit. India 6: 346. 1892. Fig. 1.

Bulbous perennial herb; bulbs globose, 1.5-2.0 x 1.5-2.0 cm, tunicated; roots fibrous from basal disc. Leaves 2-3 per bulb, 25-35 x 0.5-1.5 cm, linear, flat, 6-7 nerved, acute at apex, margin curved upwards. Scapes short, 15-25 x 0.2-0.3 cm, erect, stout, glabrous; racemes 1-3 flowered, 4-5 cm long. Flowers 15-18 mm in length, greenish-white, drooping while blooming, bracteate; bracts 5-8 x 2 mm, deltoid, membranous to scarious, acuminate; pedicels 10-15 x 1 mm, slender, green. Perianth 15-18 mm in length, greenish-white, united to 1/3 of the length; outer perianth lobes 9-11 x 3 mm, 6-7 nerved, broadly lanceolate, recurved while blooming of flower; inner perianth lobes 10-11 x 2.5 mm, 5-nerved, recurved from the tips. Stamens 6, 6.5-7 mm long; filaments 5.5 x 0.7 mm; anthers 2.5 x 0.6 mm. Gynoecium 11-12 x 2.5 mm; ovary 6-6.5 x 2.5 mm; style 5 x 1 mm, stipe short, upto1 mm long, Capsule 12-15 x 10-12 mm, Seeds 6-7 mm in dia., rotund, black.

Flowering & Fruiting: August-September.

Distribution: INDIA: Rajasthan (North-West Rajasthan), Maharashtra (Dhulia); Egypt; Afghanistan; Baluchistan; Pakistan

Chromosome number (2n): 22

Plants collected from Dhulia are under cultivation in Botanical Garden, Shivaji University Kolhapur.

Note: It grows on the hills of the arid region in Rajasthan after rains. In Maharashtra, it grows in terrain with rocky substratum around Dhulia region (Laling ghat). The population found at Dhulia region differs from the population growing at Jodhpur only in its greenish-white flowers (Fig. 1b) and just 2-3 flowers per scape. The somatic chromosome number observed was 2n=22 (Fig. 1d). This diploid number 2n=22 of the species in population from Rajasthan region has also been reported by Jakhi *et al.* (1994).

Uses: Bulbs are eaten in Sind and Baluchistan.

ACKNOWLEDGEMENTS

Senior author would like to thank Department of Biotechnology (DBT) New Delhi, for financial assistance and to the Head, Department of Botany, Shivaji University for providing facilities. Second author is thankful to authorities of Shivaji University for providing financial assistance and to Principal, Willingdon College, Sangli for providing facilities.

REFERENCES

JAKHI, P.S., N.S. DESAI & G.B. DIXIT (1994): Karyological studies in *Dipcadi erythraeum*. *J. Cytol. Genet. 29(1)*: 89-93.

MANNING J.C., P. GOLDBLATT & M.F. FAY (2004): A revised generic synopsis of Hyacinthaceae in Sub-Saharan Africa, based on molecular evidence, including new combinations and the new tribe Pseudoprospereae. *Edinb. Journ. Bot. 60 (3)*: 533-568.

PFOSSER, M. & F. SPETA (1999): Phylogenetics of Hyacinthaceae based on plastid DNA sequences. *Ann. Missouri Bot. Gard. 86*: 852-875.

SHETTY, B.V. & V. SINGH (1991): Flora of Rajasthan, Vol. 2: 843.

SPETA, F. (1998a): Systematische analyse der gattung *Scilla* L.s.l. (Hyacinthaceae). *Phyton 38*: 1-224.

SPETA, F. (1998b): Hyacinthaceae. *In*: Kubitzki, K. (Ed.) *The families and Genera of Vascular plants*. Berlin: Springer.

23. *HABENARIA COMMELINIFOLIA* WALL. (ORCHIDACEAE) – A NEW ADDITION TO THE FLORA OF ANDHRA PRADESH

S. KARUPPUSAMY[1], S. SANDHYA RANI[2] AND T. PULLAIAH[2,3]

[1]Department of Botany, The Madura College, Madurai 625 011, Tamil Nadu, India. Email: ksamylin@yahoo.co.in
[2]Department of Botany, Sri Krishnadevaraya University, Anantapur 515 003, Andhra Pradesh, India.
[3]Email: thammenenipullaiah@gmail.com

Introduction

Habenaria is one of the largest genera in the Family Orchidaceae, which comprises of about 750 species world-wide. Usually this genus are tuberous rooted, terrestrial, a few of them epiphytic and lithophytic, herbaceous annual in nature. In India, about 59 species of *Habenaria* have been reported mainly from the foothills of Himalayas, Western Ghats and Eastern Ghats (Bose *et al.* 1999). *H. commelinifolia* Wall. has been reported from central India northwards up to Western Himalayas. The report of this species is an addition to the flora of Andhra Pradesh. The previous floristic accounts of Andhra Pradesh have reported 11 species of *Habenaria* (Pullaiah 1999).

Habenaria commelinifolia Wall. ex Lindl. Gen. Sp. Orch. 325. 1835; Hook.f. Fl. Brit. India 6: 143. 1890; Haines, Bot Bihar & Orissa 3: 1157. 1924; Fischer in Gamble, Fl. Madras Pres. 3: 1470. 1928; Sant. & Kapadia, Orch. Bombay 25.t.4.f.11-12. 1966.

Robust tuberous herb. Stem up to 90 cm tall, sheathed below, leafy above; tubers one or two, ellipsoid. Leaves oblong-lanceolate, finely acuminate up to 10 cm long and 2.5 cm broad. Inflorescence 20 cm long, many flowered spikes. Flowers white, 2 cm across; bracts linear-lanceolate 1.6 cm long; lateral sepals gibbous, hatchet-shaped, dorsal orbicular, hooded; petals oblong, lip linear at base, trilobed, side lobes filiform, mid lobe shorter; spur *ca.* 6 cm long, slender, incurved.

Flowering & Fruiting: October-December.

Distribution: INDIA: Western Himalaya, Garhwal, Kumaon, central India, West Bengal, Chota Nagpur, Karnataka, Andhra Pradesh; Nepal; Myanmar; Vietnam; Thailand.

Specimen examined: Andhra Pradesh, Chittoor district, Mudendlakorava in Tirumala hills, S. Karuppusamy, 31663 (SKU).

Ecology: Plants of this taxon appear only in monsoon among the *Cymbopogon* dominated grassland at above 1000 m altitude. The population of this taxon is very scarce in Andhra Pradesh, due to over grazing and seasonal forest fire.

Conservation status: Rare in Andhra Pradesh. It needs further ecological assessments to conserve this taxon.

REFERENCES

BOSE, T.K., S.K. BHATTACHARJEE, P. DAS & U.C. BASAK (1999): Orchids of India. Naya Prokash, India.

PULLAIAH, T. (1999): Flora of Andhra Pradesh (India). Vol.3. Scientific Publishers, Jodhpur, India.

■ ■ ■

Printed by Bro. Leo at St. Francis Industrial Training Institute, Borivli, Mumbai 400 103 and published on September 17, 2009 by J.C. Daniel for Bombay Natural History Society, Hornbill House, Dr. Sálim Ali Chowk, Shaheed Bhagat Singh Road, Mumbai 400 001, Maharashtra, India.